

OFFSHORE

Work Order ID 137582

137582

October 07, 2015 10:36:05 AM

Page 1

Item ID: D117-762-041

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Replacement Skidtube

Start Date: 10/7/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 10/21/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: SLA Date: 12.01.15 Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3492	E								
D3582	Rev B								

100 Document Control 0.00

100

DOCUMENT CONTROL

DC Memo 0.00

Doc.Control -USB or Paperwork Photocopy bluefile & type labels per PPP D117-762-041 CHG002

N/A MLS OCT 23 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

Work Order ID 137582

October 07, 2015 10:36:05 AM

137582

Page 2

Item ID: D117-762-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 10/7/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 10/21/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

0.00

130

Skidtubes

0.02

Skidtubes

Memo

1-Cut Aft end using DT8185

2-Deburr ends

3-Drill Aft Cap holes using DT8678 *** OPEN AFT CAP HOLE TO .187" ***

4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube.

5-Install 3/16 cleco in Ground wire hole ,then drill all X-Bolt holes using 3/16" drill.

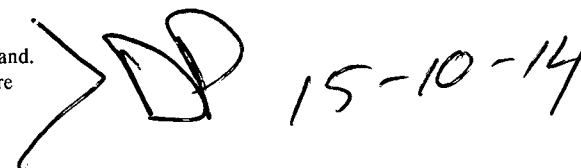
6-Drill pilot holes for wearplates using DT8900

7-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582.

8- open ground wear holes to 0.391" as per section B-B

9-Open Aft Cap holes using .209" drill.

10-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size.



DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____			
Misidentified ☐	☐	Past Due ☐	☐				

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Item ID: D117-762-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Replacement Skidtube

Start Date: 10/7/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 10/21/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
140	Skidtubes								
Skidtubes	Memo	0.01							
Skidtubes	1-Weld fwd cap D2964 per dwg D3582 and QSI 004 A/R AL ROD Batch: <u>M131562/M132917</u> 2-Grind flush								
150	QC10- Inspect visual per QSI004- ground welds	0.00							
150									
QC	Memo	0.00							
Quality Control									
160	QC5- Inspect part completeness to step on W/O	0.00							
160									
QC	Memo	0.00							
Quality Control									

DAS
38
9-89

OCT 14 2015

DAS
38
9-89

OCT 14 2015

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval 	
Description Work Order Deviation		Disposition			
				Completed By _____	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				OTHER : _____			

Work Order ID 137582***137582***

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October 07, 2015 10:36:05 AM

Item ID: D117-762-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 10/7/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 10/21/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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170 Chemical Conversion Coat per QSI005 4.1

0.00

170

HandFinish

Memo

0.01

Hand Finishing

DAS
18
9-89

180 QC7-Inspect Chemical Conversion Coat

0.00

180

QC

Memo

0.00

Quality Control

1	0	15-10-14 DG
1	0	15-10-14

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

Work Order ID 137582

October 07, 2015 10:36:05 AM

137582

Page 5

Item ID: D117-762-041 Accept ***N1900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Replacement Skidtube
Start Date: 10/7/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 10/21/2015 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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190

190

Skidtubes

Skidtubes

Skidtubes

Memo

0.02

1-Open X-Bolt holes to finish size as per Dwg D3582, all sections

2-Counter Sink X-BOLT holes as per Dwg D3582

3-Deburr and blow out chips from inside of tube, prep. tube for welding.

4-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex Batch: 133136
Exp Date: 16-2-12

5-Weld x-bolt spacers(D2973) as per Dwg D3582 section B-B.

A/R AL ROD Batch: m131562

6-Grind welds flush

200

200

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds 0.00

Memo

0.00

15-10-15

DEL 15-10-15

BE 15-10-19

DAS
38

OCT 20 2015

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____			
Misidentified ☐	☐	Past Due ☐	☐				

Work Order ID 137582

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137582

Page 6

Item ID: D117-762-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Replacement Skidtube
 Start Date: 10/7/2015 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 10/21/2015 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC5- Inspect part completeness to step on W/O	0.00							
210									DAS
QC	Memo	0.00							38
Quality Control									9-89 OCT 20 2015
215	Pressure Wash per QSI005 4.3	0.00							
215									
HandFinish	Memo	0.01							
Hand Finishing	Touch-up alodine as per QSI								
220	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
220									
Powdercoat	Memo	0.00							
Powder Coating	START TIME 8:45 OVEN TEMPERATURE 320° FINISH TIME: 9:15								

DQA: _____ Date: _____



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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Work Order ID 137582

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Item ID: D117-762-041

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/7/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 10/21/2015 Req'd Qty: 1.00 ***1***

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC3- Inspect Part Finish	0.00							
230									
QC	Memo	0.00							
Quality Control									
									DAS 15 9-89
250		0.00							
250	HandFinishing								
HandFinish	Memo	0.03							
Hand Finishing	1-Inspect for Foreign objects								
	2-Install Aft cap as per Dwg D3582, Detail "C"								
	A/R 241 Sika Flex Batch: <u>M1133136</u>								
	Exp Date: <u>16/1/2</u>								
	3-Install Wearplates as per Dwg D3582,								
	Note:Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582								
	*****Do not install bolts where indicated on Dwg(Note #6)*****								
	A/R 241 Sika Flex Batch: <u>M133136</u>								
	Exp Date: <u>16/1/2</u>								
	4-assemble o'ring as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: <u>M131349</u> RTU 598 M133275 12/05								
	5- Wing Walk as per Dwg D3582 and QSI 005 4.4								
	M133059								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
				OTHER : _____			

Work Order ID 137582***137582***

Page 8

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Item ID: D117-762-041

Accept

N19000040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 10/7/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 10/21/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	QC5- Inspect part completeness to step on W/O	0.00							DAS 38 9-89
260									
QC	Memo	0.00							
Quality Control									OCT 23 2015
270		0.00							
270	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D117-762-041 Location :FG081								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

Slt 20151023

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

Picklist Print

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Page 1

Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A07.06.11New Issue EC
IPP Rev:B 08-02-22 change to revA as per dwg DD verF by:EC IPP REV:C
15.06.11 AS PER CHG002 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3492-11		Manufactured	No			250	Each	47.0000	2	2			
D3492-11									**			15/10/21	
Plug													

Location	Loc Qty	Loc Code
FP001	47	
102294	31	
111842	16	

D3492-13		Manufactured	No			250	Each	57.0000	6	6			
D3492-13									**			15/10/21	
Plug													

Location	Loc Qty	Loc Code
FP001	57	
105614	27	
109801	30	

D3492-9		Manufactured	No			250	Each	32.0000	2	2			
D3492-9									**			15/10/21	
Plug													

Location	Loc Qty	Loc Code
FP001	32	
106121	17	
111841	15	

Picklist Print

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Page 2

Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

D3582-1-BENT

Manufactured No

130

Each

7.0000

1

1

D3582-1-BENT

Skidtube Assembly Bk117

BE15-10-07

Location

Loc Qty

Loc Code

LG002

7

123610

7

1

D2964

Manufactured No

140

Each

14.0000

1

1

D2964

Cap

BE15-10-14

Location

Loc Qty

Loc Code

LG001

14

105541

4

1

127840

10

1

D2971

Manufactured No

190

Each

29.0000

1

1

D2971

Cross Bolt Spacer

BE15-10-19

Location

Loc Qty

Loc Code

LG001

29

108778

29

1

D3584-1

Manufactured No

190

Each

1.0000

1

1

D3584-1

Web

134363 ~1 DGC 15-10-15

Location

Loc Qty

Loc Code

LG

1

134029

1

1

Picklist Print

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Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

D2973 Manufactured No

190 Each 43.0000 2 2

D2973

Cross Bolt Spacer

BE 15-10-19

Location

Loc Qty

Loc Code

LG001

43

123939

43

2

D3662-3 Manufactured No

190 Each 95.0000 1 1

D3662-3

Crossbolt Spacer

BE 15-10-19

Location

Loc Qty

Loc Code

LG001

95

105725

30

71026

18

81606

47

1

D3662-1 Manufactured No

190 Each 12.0000 3 3

D3662-1

Crossbolt Spacer

BE 15-10-19

Location

Loc Qty

Loc Code

LG001

12

114883

12

3

ALS4-1032-130 AELS4-1032-130 Purchased No

Each 4,232.000 36

ALS4-1032-130

Rivnut

all 15/10/20

Location

Loc Qty

Loc Code

CCK004

4232

M133077

4232

836

Picklist Print

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Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

ALS4-428-165

Purchased

No

Each

85.0000

2

AI S4-428-165

INSERT

all 10/10/21

Location

Loc Qty

Loc Code

FG

10

117769

10

FP001

75

117769

75

XZ

D2965

Manufactured

No

250

Each

89.0000

1

1

D2965

Cap

all 10/10/21

Location

Loc Qty

Loc Code

FP001

89

127852

89

X1

D3508-3

Manufactured

No

250

Each

4.0000

1

1

D3508-3

Wearplate Fwd Center

all 10/10/21

Location

Loc Qty

Loc Code

FP002

4

123188

4

11

D3508-9

Manufactured

No

250

Each

4.0000

1

1

D3508-9

Wearplate Fwd

all 10/10/21

Location

Loc Qty

Loc Code

FP002

4

123189

4

X1

Picklist Print

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Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

D3558-3

Manufactured No

250

Each

13.0000

1

1

D3558-3

Gasket Center Fwd

**

ll 12/10/2015

Location

Loc Qty

Loc Code

FG

1

89649

1

FP001

12

126710

12

✓

D3558-9

Manufactured No

250

Each

7.0000

1

1

D3558-9

Gasket Fwd

**

ll 15/10/2015

Location

Loc Qty

Loc Code

FG

1

80340

1

FP001

6

126711

6

X

D3558-11

Manufactured No

250

Each

7.0000

1

1

D3558-11

Gasket Aft Center

**

ll 15/10/2015

Location

Loc Qty

Loc Code

FG

1

80339

1

FP001

6

112523

1

134508

5

X

Picklist Print

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Page 6

Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

D3558-13	Manufactured	No	250	Each	10.0000	1	1	
D3558-13								**
Gasket Aft								all 13/10/21

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	1	
82380	1	
FP001	9	
126702	9	

D3508-11	Manufactured	No	250	Each	2.0000	1	1	
D3508-11								**
Wearplate Aft Center								all 13/10/21

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	2	B 137059
123190	2	

D3508-13	Manufactured	No	250	Each	1.0000	1	1	
D3508-13								**
Wearplate Aft								all 13/10/22

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	1	B136368
134862	1	

NAS1149D0332J	Purchased	No	250	Each	1,746.000	2	2	
NAS1149D0332.J								**
Washer								all 13/10/21

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
CA	14	
m129682	14	
GA	415	
m132677	415	
ST269	1317	
m130325	900	
m132677	417	

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Shop Packet Print

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Picklist Print

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Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

250

Each

476.0000

28

28

AN3C4A

Bolt

ll 13/10/23

Location

Loc Qty

Loc Code

FG

20

122814

20

11133440

x28

FP001

111

M132551

61

M132803

50

ST349

152

M133234

152

ST350

193

M132317

193

AN3C5A

Purchased

No

250

Each

595.0000

2

2

AN3C5A

Bolt

ll 15/10/20

Location

Loc Qty

Loc Code

FG

5

122800

5

FP001

268

M132930

268

x2

ST338a

72

M131803

8

M132640

64

ST350

250

M133234

250

Picklist Print

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Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0416J

Purchased

No

250

Each

4,579.000

2

2

NAS1149D0416.J

WASHER

15/10/20

Location

Loc Qty

Loc Code

GA

347

m131511

347

ST260a

2000

m131511

2000

ST270

2232

m131511

2232

XZ

NAS1149C0332R

Purchased

No

250

Each

5,758.000

28

28

NAS1149C0332R

WASHER

15/10/23

Location

Loc Qty

Loc Code

FP001

1004

m132930

1004

FP01

1871

m133284

1871

GA

441

m133284

441

ST271

2442

m133284

2442

XZ

AN4-4A

Purchased

No

250

Each

310.0000

2

2

AN4-4A

BOLT

15/10/20

Location

Loc Qty

Loc Code

FP001

20

m125709

20

ST325A

290

m129390

290

XC

Picklist Print

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Work Order ID: 137582

137582

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 10/7/2015

Required Date: 10/21/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1611-012

Purchased

No

250

Each

139.0000

6

6

NAS1611-012

O-RING

Location

Loc Qty

Loc Code

FP001

139

M127313

139

NAS1611-015

Purchased

No

250

Each

56.0000

2

2

NAS1611-015

O-RING

Location

Loc Qty

Loc Code

FP001

56

m126637

6

m131317

50

NAS1611-016

Purchased

No

250

Each

188.0000

2

2

NAS1611-016

O-RING

Location

Loc Qty

Loc Code

FP001

188

M127313

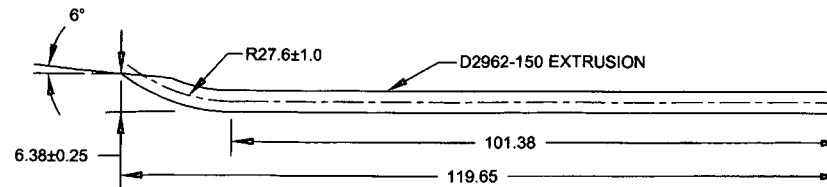
188

PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

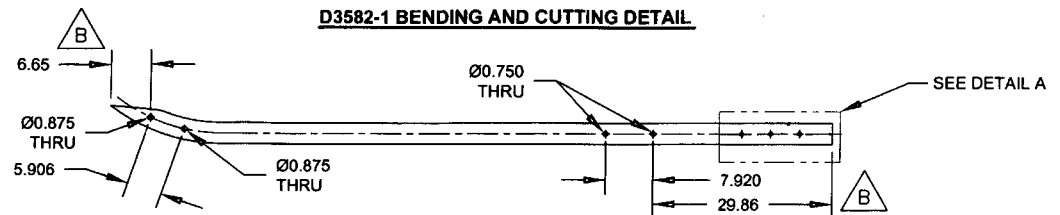
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
2	D2973	CROSS BOLT SPACER
2	D3482-049	PLUG ASSEMBLY
2	D3482-051	PLUG ASSEMBLY
6	D3482-053	PLUG ASSEMBLY
1	D3508-3	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	ALS7-428-165	INSERT
28	AN3CA4	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	NAS1149C0332R	WASHER (AN880C10L)
2	NAS1149D0332J	WASHER (AN880JD10L)
2	NAS1149D0416J	WASHER (AN880JD416L)

GENERAL NOTES:

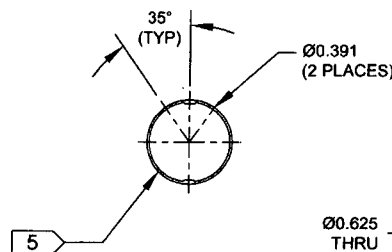
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 016 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING
- USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- DO NOT INSTALL AN3CA4 BOLTS AND NAS1149C0332R WASHERS IN INDICATED LOCATIONS.
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB
 - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
 - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4



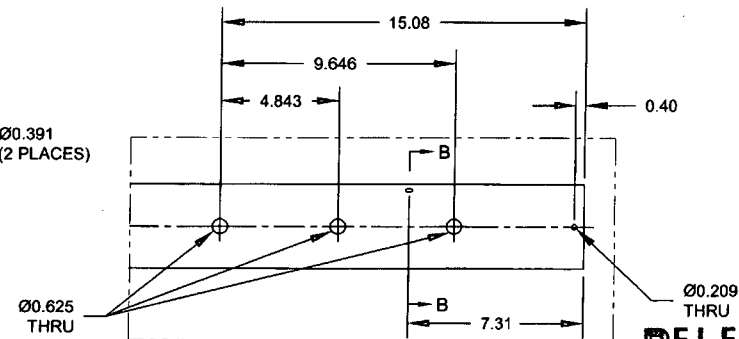
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 1:5

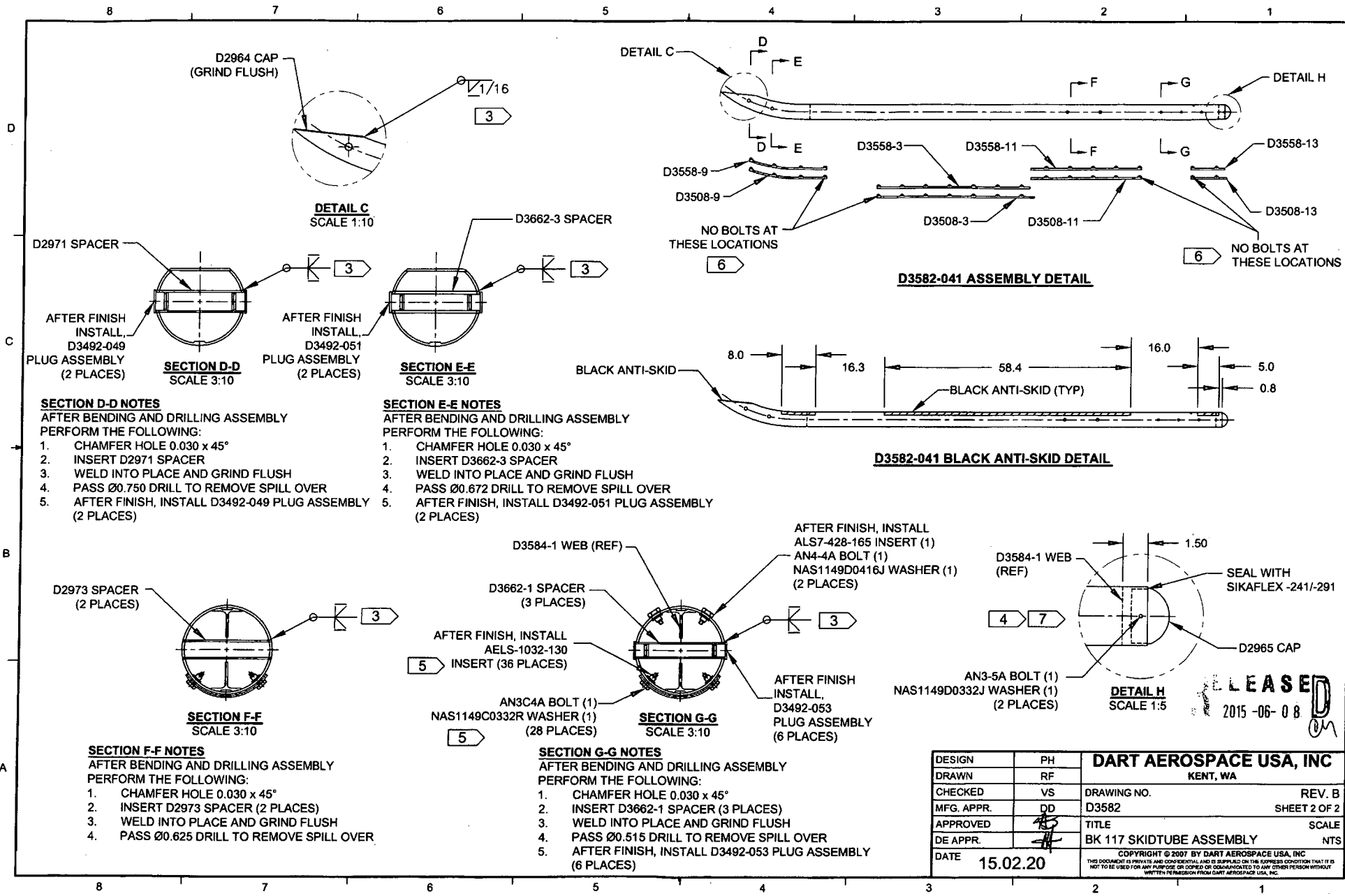


DETAIL A
SCALE 1:5

B		29.86 WAS 28.87 (ZN C2-1) INCORPORATED DEO D3582-A-1 (ZN D5-1) FORMAT TO CURRENT STANDARDS		RF	15.02.20
A		NEW ISSUE		PH	07.06.08
REV.	DESCRIPTION			BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC			
DRAWN	RF	KENT, WA			
CHECKED	VS	DRAWING NO.		REV. B	
MFG. APPR.	DP	D3582		SHEET 1 OF 2	
APPROVED	8/5	TITLE		SCALE	
DE APPR.	8/5	BK 117 SKIDTUBE ASSEMBLY		NTS	
DATE		15.02.20			

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20151007



SECTION D-D NOTES
 AFTER BENDING AND DRILLING ASSEMBLY
 PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-049 PLUG ASSEMBLY (2 PLACES)

SECTION E-E NOTES
 AFTER BENDING AND DRILLING ASSEMBLY
 PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-051 PLUG ASSEMBLY (2 PLACES)

SECTION F-F NOTES
 AFTER BENDING AND DRILLING ASSEMBLY
 PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2973 SPACER (2 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.625 DRILL TO REMOVE SPILL OVER

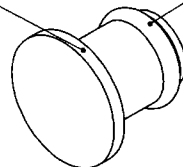
SECTION G-G NOTES
 AFTER BENDING AND DRILLING ASSEMBLY
 PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-053 PLUG ASSEMBLY (6 PLACES)

DESIGN		PH	DART AEROSPACE USA, INC	
DRAWN		RF	KENT, WA	
CHECKED		VS	DRAWING NO.	REV. B
MFG. APPR.		DD	D3582	SHEET 2 OF 2
APPROVED		AS	TITLE	SCALE
DE APPR.		H	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE		15.02.20	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

D3492-XX PLUG
(SEE TABLE)

NAS1611 O-RING
(SEE TABLE)



D3492-XXX PLUG PARTS LIST

QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	QTY -053	QTY -055	PART NUMBER	DESCRIPTION
X								D3492-041	PLUG ASSEMBLY
	X							D3492-043	PLUG ASSEMBLY
		X						D3492-045	PLUG ASSEMBLY
			X					D3492-047	PLUG ASSEMBLY
				X				D3492-049	PLUG ASSEMBLY
					X			D3492-051	PLUG ASSEMBLY
						X		D3492-053	PLUG ASSEMBLY
							X	D3492-055	PLUG ASSEMBLY
1								D3492-1	PLUG
	1							D3492-3	PLUG
		1						D3492-5	PLUG
			1					D3492-7	PLUG
				1				D3492-9	PLUG
					1			D3492-11	PLUG
						1		D3492-13	PLUG
							1	D3492-15	PLUG
		1						NAS1611-005	O-RING
			1					NAS1611-007	O-RING
1								NAS1611-010	O-RING
	1							NAS1611-012	O-RING
								NAS1611-013	O-RING
					1			NAS1611-015	O-RING
				1				NAS1611-016	O-RING

NOTES:

1) O-RING: POSSIBLE SUPPLIER P/N: NAS1611-XXX OR PARKER 2-XXX

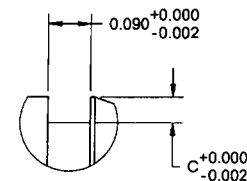
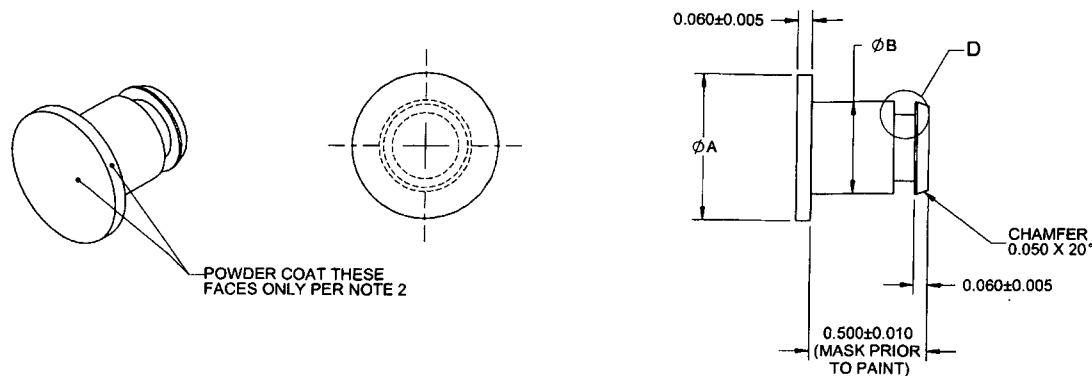
RELEASED
2013-11-13

20151007

SH 137580

E	ADD -055 PLUG ASSY & -15 PLUG	AP	13.08.08
D	INCORPORATED DEO D3492-C-1. SHT 2 DIM C FOR -1 WAS 0.055. (SEE CAR11-048)	AJS	11.05.24
C	ADD -049/-051/-053. CHANGE DRAWING FORMAT	PH	07.10.05
B	ADD -047: UPDATE DIM A FOR -045	PH	06.05.11
A	NEW ISSUE	PH	06.01.04
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AJS	DRAWING NO.	REV. E
MFG. APPR.	PH	D3492	SHEET 1 OF 2
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	PLUG	NTS
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8 7 6 5 4 3 2 1



DETAIL D

D3492-XX PLUG

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-1	0.625	0.394	0.050	M6061T6R0.625
D3492-3	0.750	0.582	0.045	M6061T6R0.750
D3492-5	0.375	0.188	0.045	M6061T6R0.375
D3492-7	0.500	0.270	0.045	M6061T6R0.500
D3492-9	0.938	0.750	0.045	M6061T6R1.000
D3492-11	0.850	0.664	0.045	M6061T6R0.875
D3492-13	0.750	0.510	0.045	M6061T6R0.750
D3492-15	0.850	0.640	0.050	M6061T6R0.875

△E

NOTES:

- 1) MATERIAL: ALUMINUM 5052-H32 OR 6061-T6 OR 1100-0 PER QQ-A-225/7 (5052) OR QQ-A-225/8 (6061) OR QQ-A-200/8 (6061) OR QQ-A-225/1 (1100) (REF. DART MATERIAL SPEC M6061T6R0.000)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE GLOSS (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

RELEASED
2013-11-13

DESIGN	PH	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ALS	DRAWING NO.	REV. E
MFG. APPR.	DS	D3492	SHEET 2 OF 2
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	PLUG	4:1
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